

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appl. No. 10/634,916
Attorney Docket No.: Q76870

REMARKS

Claims 1-18 are all the claims pending in the Application. By this Amendment, Applicant editorially amends claim 1 to fix minor informalities. The amendments to claim 1 do not narrow the literal scope of the claims and thus do not implicate an estoppel in the application of the doctrine of equivalents. These amendments to claim 1 are not made for reasons of patentability. In addition, Applicant adds claims 16-18.

Statement of Substance of the Interview

An Examiner's Interview Summary Record (PTO-413) was attached to the Office Action mailed February 10, 2005. The PTO-413 requires the Applicant to file a Statement of Substance of the Interview. The Statement of Substance of the Interview is as follows:

The telephonic interview that took place on February 3, 2005 was administrative in nature. That is, Applicant called the Examiner because the Office Action issued December 16, 2004 appeared to be incomplete. The Examiner indicated that the last page of the office action in the above-identified application does not match the other pages and that a new office action will be sent with a new start date. No claims and no prior art references were discussed during the Interview.

It is respectfully submitted that the instant Statement of Substance of Interview complies with the requirements of 37 C.F.R. §§1.2 and 1.133 and MPEP §713.04.

It is believed that no petition or fee is required. However, if the USPTO deems otherwise, Applicant hereby petitions for any extension of time which may be required to

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maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to Deposit Account No. 19-4880.

Summary of the Office Action

The Examiner allowed claims 10-15. In addition, the Examiner indicated that claims 3, 4, 6, and 7 contain allowable subject matter. The Examiner, however, found new grounds for rejecting claims 1, 2, 5, 8/2/1, 8/5/1, 8/1, 9/2/1, 9/5/1, and 9/1, which stand rejected under 35 U.S.C. § 102(c).

Claim Rejections under 35 U.S.C. § 102

Claims 1, 2, 8/1, 8/2/1, 8/5/1, 9/1, 9/2/1, and 9/5/1 are rejected under 35 U.S.C. § 102(c) as being anticipated by U. S. Patent No. 6,453,135 to Sameshima et al. (hereinafter "Sameshima"). Applicant respectfully traverses this rejection in view of the following comments.

It will be appreciated that the following remarks relate to the invention in a general sense, the remarks are not necessarily limitative of any claims and are intended only to help the Examiner better understand the distinguishing aspects of the claims mentioned further below. In general, Applicant's invention relates to preventing the EL array exposure heads from being deteriorated due to ultraviolet rays in an image carrier cartridge to which the organic EL array exposure heads are attached. In addition, Applicant's invention relates to preventing the leakage of stray light from the transparent substrate on which the organic light emitting elements are mounted and preventing the re-incident of light onto the transparent substrate in the exposure head.

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Prior art disclosed in the present application teaches that the EL array exposure head is moved outside of the apparatus and is exposed to outside light together with the image carrier cartridge during replacement of the image carrier cartridge or during the process of removing a jammed paper. Due to this exposure to the ultraviolet light, the EL light emitting elements of the exposure head deteriorate, resulting in reduction of a light emitted amount and also in a variation of the light emitted among the EL light emitting elements. In the exemplary embodiment of the present invention, however, a number of shielding members are provided to protect the EL light emitting elements from the exposure to the ultraviolet light.

Turning to the cited reference, Sameshima teaches an image forming apparatus capable of maintaining and replacing the image carrier units and improving the workability of paper jamming recovery (col. 1, lines 55 to 60). Sameshima teaches that conventionally the exposure means for forming images on an image carrier are positioned on the cover of the apparatus. Accordingly, the opening and closing of the cover e.g., to fix the paper jam or replace the cartridge, may shift the positioning of the exposing means. When the exposing means is shifted, image defects may occur (col. 1, lines 14 to 55). To prevent these shifts of the exposure means, Sameshima teaches positioning the exposure means behind the image carrier (col. 3, lines 12 to 15).

Specifically, Sameshima teaches four image carriers 1a to 1d arranged in a vertical direction. Provided around the image carrier 1 are: respective charging means 2a to 2d for uniformly charging surfaces of the image carriers 1, respective scanner units 3a to 3d serving as exposing means for forming electrostatic latent images on the image carrier 1 by irradiating the

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image carrier with a laser beam based on image information, respective developing means 4a to 4d for developing toner images by adhering negatively charged toner to the electrostatic latent images, a conveyance apparatus 5 for conveying a transfer material to transfer the toner images on the image carrier 1 to a sheet S as a transfer material, and respective cleaning means 6a to 6d for removing post-transfer remaining toner remaining on the surface of the image carrier after transfer. Sameshima teaches that the image carriers 1, the charging means 2, the developing means 4, and the cleaning means 6 form a process cartridge 7 (Fig. 1; col. 2, lines 45 to 65).

In Sameshima, the respective process cartridges 7a to 7d and the conveyance apparatus 5 are structured to be detachably attachable to the front aside of the apparatus body in about the same direction, so that the respective process cartridges 7 can be replaced and the respective color toners can be filled. Furthermore, when paper jamming occurs, the jammed paper on the conveyance belt 11 can be removed easily (Fig. 2; col. 4, line 41 to col. 5, line 16). Moreover, the image carrier 1 has protection covers 57a to 57d serving as moving members. This protection cover 57 avoids the image carrier 1 from being exposed while the conveyance apparatus 5 is disengaged and prevents dusts from attaching and image defects from occurring due to the surface receiving damages (Figs. 4 and 9; col. 6, line 65 to col. 7, line 17).

With respect to the scanning units 3a to 3d, Sameshima teaches that each of these units is disposed approximately at the rear of the image carrier 1. Image lights corresponding to image signals emitted out of laser diodes irradiate polygonal mirrors 9a to 9d as scanning means, which are rotated at a high rate by a scanner motor. The image light reflected at the polygonal mirror forms electrostatic latent images by selectively exposing to the light the surface of image carriers

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l which are charged by focusing lenses 10a to 10d. Each of the developing means 4a to 4d is constituted of a developer containing each color among yellow, magenta, cyan, and black (Fig. 1; col. 3, lines 13 to 24).

In addition, Sameshima teaches that a light path shielding shutter 71 is provided for shielding the light path from the scanner unit 3 as exposing means to the image carrier 1. The light path shielding shutter 71 is a plate material disposed along a vertical stay 70 of the apparatus body. The shutter is slidably structured in taking the shielding position and non-shielding position by passing a securing shaft 70b formed at the vertical stay 70 to a long hole 71b of the light path shielding shutter 71. In the vertical stay 70 and the light path shielding shutter 71, light path holes 70a, 71a are formed between the scanner units 3 and the image carriers 1 to permit light from the scanning unit 3 during the non-shielding position (Figs 12 and 13; col. 8, lines 20 to 48).

The Examiner contends that Sameshima teaches each feature of claims 1, 2, 5, 8/2/1, 8/5/1, 8/1, 9/2/1, 9/5/1, and 9/1. This rejection is not supportable for at least the following reasons. Of the rejected claims, only claim 1 is independent. Independent claim 1 recites: "image carrier cartridge comprising at least one image carrier...and an exposure means...wherein said exposure means comprises... a light shielding member for shielding at least ultraviolet rays is provided around said exposure means."

It is respectfully pointed out that Sameshima fails to disclose a cartridge having at least one image carrier and an exposure means and having a light shielding member around the exposure means as recited in claim 1. Sameshima teaches a cartridge 7 having the image carrier

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1. The exposure unit, however, is not in the cartridge 7 but rather a separate scanning unit 3. In Sameshima, the cartridge 7 with the image carrier 1 is detachable, whereas the scanning unit 3 is a separate, non-detachable unit. That is, Sameshima's cartridge 7 lacks having the exposure unit. Moreover, in Sameshima, only a shutter 71 is provided to shield the scanner unit 3 from light when the cartridge 7 is removed. That is, Sameshima fails to teach or suggest having a light shielding member around the scanner. Sameshima only teaches a shutter between the scanning unit 3 and the cartridge 7 to shield the scanner unit 3 from light. That is, the scanner unit 3 is not detachable and only the portion that will be exposed to light when the cartridge 7 is removed, will be shielded, i.e., using the shutter 71.

The Examiner alleges that the light shielding member and the exposure means as set forth in claim 1 are equivalent to Sameshima's reference numeral 3 (scanning unit). As explained above, the scanning unit 3 is not part of the cartridge 7. In addition, only a shutter 71 and not a member surrounding the scanner is provided to shield the scanner unit from light. In short, a detachable cartridge having at least one image carrier and the exposure unit, and a light shielding member around the exposure unit is not disclosed by Sameshima. In summary, the deficiencies of the Sameshima reference fall to the Examiner's burden to show inclusion of the claim elements. Therefore, for all the above reasons, independent claim 1 is patentable. Claims 2, 5, 8/2/1, 8/5/1, 8/1, 9/2/1, 9/5/1, and 9/1 are patentable at least by virtue of their dependency on claim 1.

In addition, dependent claim 2 recites: "said light shielding member has a first light shielding member disposed to cover said organic EL light emitting element array." The

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Examiner contends that Sameshima's feature 9 is equivalent to the EL light emitting element array as recited in claim 2 (see page 2 of the Office Action). This grounds of rejection is respectfully submitted to be incorrect as a technical matter. First, Sameshima's feature 9 is polygonal mirrors on which light from laser diodes is emitted (col. 3, lines 14 to 19). That is, the mirrors 9 do not emit light but simply reflect light emitted by the laser diodes. Sameshima does not teach or suggest a light shielding member for the laser diodes. Moreover, Sameshima fails to teach or suggest a light shielding member for the mirrors. In other words, Sameshima fails to teach or suggest the light shielding member having a first light shielding member disposed to cover the EL light emitting element array. For at least this additional reason, it is respectfully submitted that claim 2 is patentably distinguishable over Sameshima.

Allowable Subject Matter

The Examiner's indication that claims 10-15 are allowed is gratefully noted, as well as the Examiner's indication that claims 3, 4, 6, and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in the independent form including all of the limitations of the base claim and any intervening claims (see page 2 of the Office Action).

Applicant respectfully holds the rewriting of the dependent claims 3, 4, 6, and 7 in abeyance until the rejection of the independent claim 1 has been reconsidered.

New Claims

In order to provide more varied protection, Applicant adds claims 16-18. Claims 16-18 are patentable at least by virtue of their dependency on claim 1.

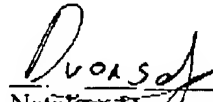
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Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly invited to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,


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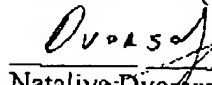
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